

**Emergency Transboundary  
Outbreak Pest (ETOP) Situation  
Report for April with a Forecast  
till mid-June, 2011**

## Summary

In April, **Desert Locust (SGR<sup>1</sup>)** persisted in northwestern Mauritania and on the Red Sea coast in Saudi Arabia where a second generation breeding occurred, but declined in Egypt and Sudan. Control operations treated more than 24,000 ha mostly in Saudi Arabia, Mauritania and Egypt. A few hundred hectares were also treated in Algeria and Morocco. No locusts were detected during surveys carried out in eastern Ethiopia and coastal areas in Eritrea, Yemen or Oman and Small-scale breeding occurred in western Pakistan and southeastern Iran during this period. No surveys were carried out in Mali, Niger, Senegal, Tunisia and Chad and no reports were received from Libya during this period (CNLA/Mauritania, CNLAA/Morocco, DLCO-EA, DLMCC/Yemen, DPPQS/India, FAO-DLIS, INPV/Algeria, PPD/Ethiopia, and PPD/Sudan).

**Forecast:** Unabated locusts from the Red Sea coast in Saudi Arabia could form small swarms and groups and move to the interior of the country in the coming weeks and possibly cross the Red Sea and reach Sudan later. Adult locusts from northern Mauritania will move to the summer breeding in south of the country. Locust numbers

will increase slightly in the spring breeding areas in western Pakistan, but decline during the forecast period as some adults begin moving to the summer breeding areas along the Indo-Pakistan border. The current political unrest in the locust-affected countries can undermine survey and monitoring. Active surveillance and preventive interventions should be exercised to abate locust movements between breeding areas and avoid unexpected surprises (CNLA/Mauritania, CNLAA/Morocco, DLCO-EA, DLMCC/Yemen, DPPQS/India, FAO-DLIS, INPV/Algeria, PPD/Ethiopia, and PPD/Sudan).

## Other ETOPs

**Red (Nomadic) Locust (NSE):** NSE populations were detected in Ikuu-Katavi, North Rukwa and Wembere plains during a joint aerial surveys in March/April by the International Red Locust Control Organization for Central and Southern Africa (IRLCO-CSA) and the Tanzania Ministry of Agriculture, Food Security and Cooperatives (MOAFSC). 8,000 ha of swarms ranging in densities from 20->50 locusts/m<sup>2</sup> infested Ikuu plains and an estimated total of 3,000 ha was reported infested with swarms and concentrations with densities ranging from 10->40 insects/m<sup>2</sup> in Katavi plains. Swarms were seen migrating west from Ikuu plains on 22<sup>nd</sup> and 30<sup>th</sup> April. In North Rukwa plains some 2,000 ha were reported infested with locust densities ranging from 10-15 insects/m<sup>2</sup> while in Wembere plains, an estimated 2,000 ha was reported infested in March. Control operations were in progress in Ikuu Plains where GreenMuscle, a fungal-based biopesticide was being used (IRLCO-CSA).

<sup>1</sup> Definitions of all acronyms can be found on the last pages of this report.

### **Madagascar Migratory Locust**

**(LMC):** The Malagasy locust situation continued further developing and large numbers of hoppers and immature and mature adults and swarms were reported. More than 24,540 ha of swarms and hopper bands were treated with Chlorpyrifos and more than 38,250 ha were protected with 7,650 l of Nomolt. As of the end of April, 2011, close to 186,206 ha have been protected or controlled with Chlorpyrifos and Nomolt. More than 596 empty 200-liter pesticide barrels have been recovered and stored under direct supervision of the National Locust Control Center (CNA) in Toliara (Tuléar) and the Zonal locust operation base since the current spray campaign began on November 28, 2010. The two helicopters that began operations on October 13, 2010 have so far logged in 662 hours and 54 minutes.

Environmental assessment of spray operations with Chlorpyrifos in treated areas concluded that no intoxication of humans or domestic animals was reported and some beneficial insects, such as ants, and beetles showed some impacts, including slow re-colonization and Tenebrionidae and Carabidae beetles showed a 23.5 to 40% decrease in Mahafaly. Beehives were not present in the sprayed areas and impact data was not available on honeybee and no adverse impact was observed on vertebrates (FAO-CNA).

**Forecast:** Displacement of dense swarms will continue east and northwards, particularly in central Horombe. Mating will probably take place in the surroundings of Manambien

where ecological conditions remain favorable and followed by new hatchings and hopper developments during the second decade of May. Breeding will likely take place in Androy, where crops remain undamaged. This will require strict vigilance and continuation of the current campaign over the coming months (FAO-CNA).

***Note: The UN/FAO and the Malagasy Center for Locust Control are spearheading the current locust control campaign in the country. The United States Agency for International Disaster Assistance (OFDA) responded in time and favorably to the appeal issued in support of the locust emergency campaign operations. Other donors have pledged and/or made contributions and it is anticipated that this will likely continue. End note.***

**Moroccan (DMA), Italian (CIT) and Migratory (LMI)** locusts in Central Asia and the Caucasus (CAC): No locusts were reported in April and significant activities are not expected during the forecast period. However, as the weather is getting warmer, DMA may have begun hatching and form hoppers and bands in some areas in northern Afghanistan and adjacent areas in Tajikistan. Other countries in CAC will likely remain relatively calm. CIT and LMI are not expected to appear during the forecast period. Nevertheless, routine surveillance and monitoring are essential (AELGA).

**Armyworm (AAW):** AAW outbreaks were reported in Kwale, Kinango, Malindi, Taweta, Mwatate, Rabai, Kaloleni, Kilifi, Magarani, Tana Delta and Lamu west districts of the Coast Province in Kenya where medium to high density 2<sup>nd</sup> and 3<sup>rd</sup>

instar larvae were seen attacking maize and pasture. Control operations were carried out by farmers with material assistance from the MOA. The pest was also reported attacking young maize plants and pasture in Korongwe District in Tanzania (DLCO-EA, Mushobozi).

Small-scale infestations will continue in the northern and northeastern parts of Tanzania and spread to the Central, Southern Rift Valley and Eastern parts of Kenya, where breeding conditions are favorable (DLCO-EA).

**Quelea (QQU):** A DLCO-EA aircraft controlled QQU roosts/colonies on more than 740 ha in Dododma, Mwanza and Tabora Districts in Tanzania. The pest was seen threatening finger millet, bulrush millet, sorghum and rice. A DLCO-EA aircraft also controlled QQU roosts on paddy rice in Siaya and Bunyala districts in the Western Province of Kenya. QQU infestations were not reported in Ethiopia or other neighboring countries at the time this report was compiled. QQU roosts persisted in Chokwe district in Gaza Province in Mozambique (DLCO-EA, IRLCO-CSA).

A late received report indicated that QQU outbreaks were controlled in Gwanda and Plumtree districts of Matabeleland South Province in Zimbabwe using 200 l of Cyanophos 520 ULV. The pest was seen attacking small grain crops (IRLCO-CSA).

**OFDA/AELGA** (Assistance for Emergency Locust and Grasshopper Abatement) will continue monitoring ETOP situations in all regions and issue

updates and advices as often as necessary.

## End summary

### Progress in SGR Frontline Countries:

SGR frontline countries (FCs) in Sahel West Africa, namely **Chad, Mali, Mauritania** and **Niger** have established autonomous national locust control units (CNLA) responsible for DL activities.

Funds provided by the African Development Bank, the World Bank, USAID, France, FAO, host-governments, neighboring countries and others enabled the FCs to equip CNLAs with necessary tools, materials and infrastructure as well as help train staff to prevent and respond to DL outbreaks and avoid the threats they pose to food security and livelihoods of vulnerable communities.

*CNLAs' ability to avert, respond to and mitigate devastating DL outbreaks and invasions need to be encouraged and supported.*

### OFDA ETOP Activities

- OFDA/TAG continues its initiatives in pesticide risk reduction through stewardship network (PRRSN) to ensure safety of vulnerable people as well as protect their assets and the environment against pesticide pollution. OFDA/TAG successfully launched two sub-regional PRRSNs in Eastern Africa and the Horn. Discussions that began several months ago to launch similar initiatives in North Africa and the Middle East were halted by the ongoing situation in the regions. Dialogue on introducing similar initiatives in other regions is underway.
- OFDA continues its support for capacity strengthening to mitigate, prevent and respond to and risks of ETOP emergencies

and associated human health threats and environmental pollutions.

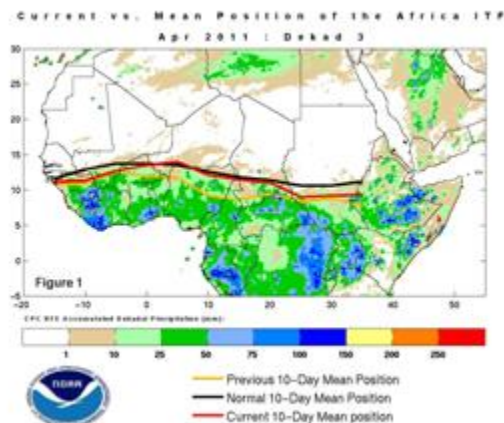
- OFDA encourages and supports [FAO's] initiative to strengthen national and regional capacities in Central Asia and the Caucasus (CAC) to help coordinate locust monitoring, reporting as well as interventions among neighboring countries. The ultimate goal of the initiative is to prevent and mitigate locust threats and improve food security and livelihoods of vulnerable communities.

**All SITREPs can be accessed on our website at:**

[http://www.usaid.gov/our\\_work/humanitarian\\_assistance/disaster\\_assistance/locust/](http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/locust/)

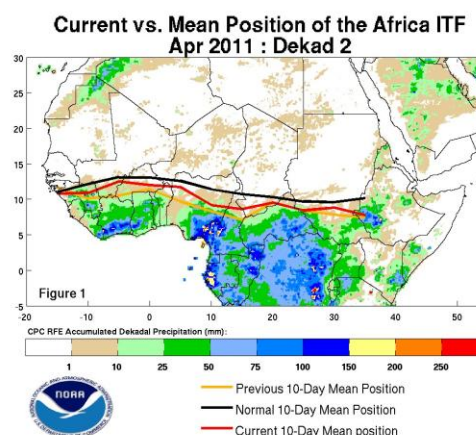
## Weather and ecological conditions

During the 3<sup>rd</sup> dekad of April, the Inter-Tropical Front (ITF) continued its northward migration with its mean western portion approximated at 12.7N, but lagged behind the climatological position by about half a degree and the mean eastern position approximated at 9.6N, nearly 1.3 degrees further south of its position for this time of the year.



The northward movement of the ITF during the third dekad of April was attributed to resurgence of southerly winds across areas in the Gulf of Guinea region and moisture convergence in the eastern portion (see map above --- ITF historical mean position for this dekad, --- ITF position for this dekad) (NOAA).

During the second dekad of April, the Front remained below average position for the second consecutive dekad with the mean western portion approximated at 11.3N, lagging behind the climatological mean position by about a degree latitude.

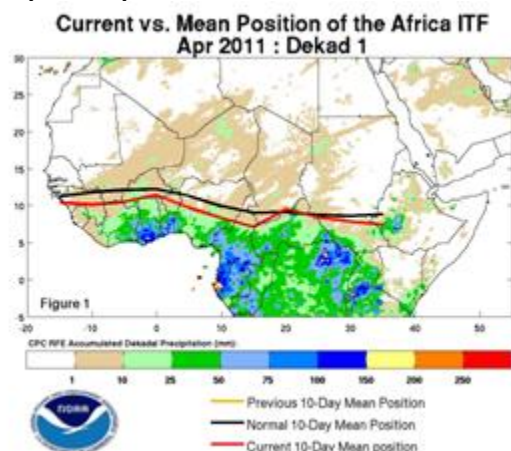


The mean eastern position of the ITF was approximated at 8.6N and was further south of the mean position for this time of the year. The positional anomaly during the second dekad of April was attributed to below-average dew points and relatively low convergence of winds throughout many local areas in the Gulf of Guinea region as well as the semi-arid areas of the Sahel (see map above, --- historical mean position, --- position for this dekad (NOAA). Rainfall deficit was reported in the northwest and Centre Malagasy Migratory locust gregarization whereas the south received normal to above normal precipitation. However, as a whole the situation remained favorable in most of the areas over the past three dekads except in Ihosy, Ankaraobato, Gogogogo, Beomby and Soalara (FAO-CNA).

The mean position of the Front was near 10N at more than 1 degree lower than the



climatological mean for early April. This resulted in below average moisture in the lower Sahel region. The mean eastern portion of the ITF was approximated at 8.3N and slightly behind the climatological mean for this period of the year. This was associated with marked dryness in southern Sudan and locally high rainfall in northern parts of the Central African Republic. The below map shows the ITF's dekadal position (in red) and climatology position (in black) for the first dekad of April (NOAA).



In Madagascar, medium to heavy rains fell in the northwest and the central gregarization zones, including Ihosy and in Sakaraha where conditions remained favorable. The northwest and central transient multiplication zones also enjoyed adequate moisture. Mahafaly Plateau, Belomotra and other gregarization zones experienced moisture deficit during this period (FAO-CNA). The weather remained dry in Bikaner Divisions and North Gujarat Region, Saurashtra and Kutch. Soil moisture and humidity are not favorable for locust breeding in the Scheduled Desert Area of Rajasthan and Gujarat (DPPQS/India).

**Note:** Changes in the weather patterns and the shift in the ecology of landscape are believed to exacerbate the risk of pest outbreaks and resurgence. Regular

monitoring and reporting are essential. **End note.**

**Detailed accounts of ETOP situation, activities and ecological conditions are presented below.**

**SGR - Western Outbreak Region:** The SGR infestation remained active in April in northwestern Mauritania and southwestern Morocco where control operations treated hoppers and adults on 8,000 ha and 300 ha in southwestern Morocco. Adult locusts also persisted in the southern side of the Atlas Mountains in Morocco and hatching occurred in near irrigated crop fields central Sahara in Algeria where control operations treated 440 ha. No reports were received from Libya and no locusts were reported in Mali, Niger, Chad or other Sahel West African countries where dry conditions prevailed during this month (CNLA/Mauritania, CNLAA/Morocco, FAO-DLIS and INPV/Algeria).

**Forecast:** Hoppers will mature and form more adults in the coming weeks in northern Mauritania and move to the summer breeding in southern part of the country towards the latter part of the forecast period. Although reports were not received from Libya in April or March, it is likely that low numbers of isolated solitary adults persisted near Ghat and Ghadames in the western part of the country. Active surveillance and monitoring are crucial to avoid an increase in locust numbers (CNLA/Mauritania, CNLAA/Morocco, FAO-DLIS and INPV/Algeria).

**SGR - Central Outbreak Region:** In April, SGR infestation persisted in the Red Sea coast in Saudi Arabia where a second generation breeding occurred, but declined in Egypt and Sudan. Control operations treated hoppers and bands and adult groups on 13,124 ha in Saudi Arabia and 2,150 ha in Egypt. The situation remained calm in other countries in the region. It is to be recalled that in March, hopper bands, groups and adults were treated on more than 28,960 ha, mostly in Saudi Arabia and >20,700

ha were treated in February in Saudi Arabia alone. No locusts were reported during surveys carried out in April in eastern Ethiopia and coastal Eritrea. Other countries in the central region also remained calm during this period (DLCO-EA, DLMCC/Yemen, FAO-DLIS, PPD/Ethiopia, and PPD/Sudan).

**Forecast:** Escapee locusts on the Red Sea coast of Saudi Arabia will likely form groups and small swarms in the coming weeks and move to the interior of the country as the vegetation dries out on the coastal areas. Should ecological conditions permit, small-scale breeding could take place in the interior of the country. Small swarms may also from and cross over to the northern coastal areas in Sudan towards the end of the forecast period. Other countries in the region will likely remain fairly calm during the forecast period (AELGA, DLCO-EA, FAO-DLIS, DLMCC/Yemen, and PPD/Ethiopia).

**SGR - Eastern Outbreak Region:** Small-scale breeding occurred in spring breeding areas in Baluchistan western Pakistan and in southeastern Iran. The scheduled desert regions in India remained free of locusts during this period (DPPQS/India, FAO-DLIS).

**Forecast:** Locust numbers will increase slightly in the spring breeding areas in western Pakistan, but decline during the forecast period as some adults begin moving to the summer breeding areas along the Indo-Pakistan border (DPPQS/India, FAO-DLIS).

**Red (Nomadic) Locust (NSE):** NSE populations located in Ikuu-Katavi plains, North Rukwa plains and Wembere plains during aerial survey carried out jointly by International Red Locust Control Organization for Central and Southern Africa (IRLCO-CSA) and Ministry of

Agriculture, Food Security and Cooperatives (MAFSC) Tanzania in March/April persisted. A total of 8,000 ha of the Ikuu plains was infested by swarms ranging in densities from 20->50 locusts/m<sup>2</sup> and an estimated 3,000 ha were infested in Katavi plains with concentrations with densities ranging from 10->40 locusts/m<sup>2</sup>. Migration of swarms from Ikuu plains were reported on 22nd, and 30th April 2011. The swarm displacement was westerly. A total of 2,000 ha in the North Rukwa plains were infested with locust densities ranging from 10-15 locusts/m<sup>2</sup> while in the Wembere plains, an estimated 2,000 ha was reported infested in March. Control operation was in progress in Ikuu Plains at the time this report was compiled and GreenMuscle, a fungal-based biopesticide was being used (IRLCO-CSA).

A late received report indicated that some 250, 3<sup>rd</sup> to 6<sup>th</sup> instar hopper bands at densities ranging from 20-80 insects/m<sup>2</sup> were detected over some 12,000 ha during surveys carried out on 22<sup>nd</sup> to 30<sup>th</sup> March by IRLCO-CSA and MoAFSC in Ikuu-Katavi plains in Tanzania. Immature adults at 3-8 insects/m<sup>2</sup> were also detected over 2,000 ha in North Rukwa Plains and Wembere plains were infested with 3<sup>rd</sup> to 6<sup>th</sup> instars hoppers at 20-40 insects/m<sup>2</sup> over 500 ha. Locusts were also reported in Lake Chilwa/Lake and Chiuta plains in Malawi in March (IRLCO-CSA).

**Forecast:** Control operations that started in April in Ikuu-Katavi, Rukwa Valley and Wembere in Tanzania will end in May and swarming populations are expected to be substantially reduced. In Malawi (Lake Chilwa/Lake Chiuta plains), Mozambique (Buzi-Gorongosa and Dimba plains) and Zambia (Kafue and Lukanga swamps), dry conditions will cause vegetation to dry up and lead to the start of grass burning which will force locusts to concentrate and form groups and later swarmlets. IRLCO-CSA will undertake survey and control operations during the months of June/July as necessary (IRLCO-CSA).

**Madagascar Migratory Locust (LMC):**

Locust operations continued in Madagascar where large numbers of hoppers and immature and mature adults were observed and treated in April. Dense swarms mostly composed of immature adults and hopper bands were observed in the south and southeast zones on the plateaus and coastal lowland areas in Karimbola, in the region of Ambohangy and in Androy. A similar situation was reported in Tsihombe and Beloha southern breeding and outbreak areas as well as the northwest zones in the lowland of Befandriana-Sud and the valley of Manombo. Hatchings took place and hoppers were formed in the central zone on the Horombe plateau, in Ianakafy and Jangany. Swarm and 4<sup>th</sup> and 5<sup>th</sup> instar hoppers were reported in Sakoa, Sakamena, and Soamanonga and transient 4<sup>th</sup> and 5<sup>th</sup> instar bands persisted in the gregarization areas in Belomotra plateau. Adult populations and gregarious 2<sup>nd</sup> - 3<sup>rd</sup> instar hoppers were also reported in areas where swarms were detected during the 2<sup>nd</sup> dekad of March (FAO-CNA).

**Interventions:**

In April, swarms and hoppers were controlled with Chlorpyrifos and more than 38,250 ha were protected with 7,650 l of Nomolt against locust attacks. So far, 100,380 ha were treated by air with Chlorpyrifos 60,750 ha protected using Nomolt. In addition, 19,076 ha were treated by ground means. As of the end of this month, a cumulative total of 186,206 ha have been treated and or protected with Chlorpyrifos and Nomolt.

More than 596 empty 200-liter pesticide barrels have been recovered and stored under direct supervision of the National Locust Control Center (CNA) in Toliara (Tuléar) and the Zonal locust operation base since the current spray campaign

began on November 28, 2010. The two helicopters that began operations on October 13, 2010 have logged in 662 hours and 54 minutes.

An environmental assessment of the impacts of Chlorpyrifos was conducted in the transient multiplication zones in Mahafaly. Intoxication of humans or domestic animals was not observed. However, re-colonization of the treated zones by ants was disrupted up to seven days post-treatment. Populations of Tenebrionidae and Carabidae beetles showed a 23.5 to 40% decrease. Beehives were not present in the sprayed areas and impact data was not collected on honeybee and no adverse impact was observed on vertebrates (FAO-CNA).

*As of April 30<sup>th</sup> pesticide inventory for the current campaign stands at 1,600 l of Chlorpyrifos, 7,000 l of Nomolt and 1,150 kg of GreenMuscle and this figures are considered much less than what is required to pursue the control and preventive campaign at the current application rate (FAO-CNA).*

**Forecast:** Displacement of dense aerial swarms will continue east and northwards, particularly in central Horombe. Mating will probably take place in the surroundings of Manambien and new hatchings and hopper developments will follow during the second decade of May. There is a likelihood of dense swarms appearing on the western side of the Isalo and/or on the Ankazoabo-Tandrano plateau bypassing the Taheza, Sakondry and Imaloto valleys. It is likely that the situation will require continuation of the current campaign over the coming months (FAO-CNA).

***CNA and partners must remain vigilant and continue monitoring and reporting of areas where egg laying has occurred and locust developments have been detected or will be likely must be reported and responded to as rapidly as possible.***



**OFDA/TAG will continue monitoring the situation in close collaboration with FAO, CNA and other partners and issue updates and provide advice as often as necessary.**

**Moroccan (DMA), Italian (CIT) and Migratory (LMI)** in Central Asia and the Caucasus (CAC): No updates were received at the time this report was compiled, however, as the weather starts improving and the temperatures start rising DMA may have likely begun appearing and forming hoppers in some areas in northern Afghanistan and adjacent areas in Tajikistan.



(Locust prone CAC countries, FAO)

Other countries in CAC will likely remain relatively calm during the forecast period. CIT and LMI are not expected to appear during the forecast period. Routine surveillance and monitoring are essential (AELGA).

**Australian Plague Locust (APL):** No update was received at the time this report was compiled, but it is likely that egg laying continued in April in parts of western Victoria and southern South Australia and most of the eggs that were laid during this period and earlier have begun diapausing (over seasoning).

**Forecast:** Most of the eggs laid during April and during previous month will remain dormant and hatching begins sometime in October and followed by high density hoppers in some locations (AELGA, APLC).



(Australian plague locust, source: APLC)

**Timor and South Pacific:** No update was received in April on the locust situation in Timor, but it is likely that migratory locust may have been posing a threat to crops and pasture in the past months in East Timor. The situation will likely further develop during the forecast period. It is important that a proactive stance is maintained to avoid significant damage to crops and pasture (AELGA).

**African Armyworm (AAW):** AAW outbreaks were reported in Kwale, Kinango, Malindi, Taweta, Mwatate, Rabai, Kaloleni, Kilifi, Magarani, Tana Delta and Lamu west districts of the Coast Province in Kenya where 2<sup>nd</sup> and 3<sup>rd</sup> instar larvae at densities ranging from 30-50 larvae/m<sup>2</sup> were seen attacking maize and pasture. Control operations were carried out by farmers with material assistance from the MOA. Infestations were also reported in Korogwe District in Tanzania where the pest was seen attacking young maize plants (see picture below).

The AAW season has ended in the southern and south-central outbreak areas in Malawi, Mozambique, Zambia and Zimbabwe and no further development is expected until next breeding season later this year (DLCO-EA, IRLCO-CSA).





(a farmer standing in the middle of his maize field in Korongwe, Tanzania and gazing in disbelief at what AAW larvae have done to his crop; photo, courtesy Wilfred Mushobozi, April, 2011)

**Forecast:** Small-scale infestations will continue in the northern and northeastern parts of Tanzania and likely spread to the Central, Southern Rift Valley and Eastern parts of Kenya. There is a likelihood of AAW appearing in southern Ethiopia and threaten pasture and young plants during the forecast period. Trap operators, including members of the community forecasters where available, are advised to remain alert and report moth catches to the appropriate bodies (AELGA, DLCO-EA, IRLCO-CSA).

**Quelea (QQU):** QQU outbreaks were reported in Kondoa District central Tanzania where a DLCO-EA Aircraft sprayed 10 roosts/colonies with Queletox on 499 ha of *Acacia* trees/*Typha* grasses. Two additional colonies were also treated on 210 ha of *Acacia* trees in Dodoma District. The pest was seen threatening finger millets, bulrush millet, sorghum, and rice. MOASFC/Tanzania reported sightings of flocks of QQU populations around Kapunga Rice Seed Farm, in Mbarali District, Mbeya region. No crop damage

was reported, but MoAFSC is mobilizing resources to abate any impending threat.

A QQU infestation was also reported on paddy rice in Siaya and Bunyala districts in the Western Province in Kenya where a DLCO-EA aircraft controlled seven roosts. No QQU infestations were reported in Ethiopia or other neighboring countries at the time this report was compiled (DLCO-EA).



(A QQU roost, a file photo; free encyclopedia)

A late received report indicated that QQU outbreaks occurred in Gwanda and Plumtree districts of Matabeleland South Province of Zimbabwe where the pest was seen attacking small grains crops and controlled with 200 l of *Queletox* (IRLCO-CSA).

**Facts:** QQU birds can travel ~100 km/day looking for food. An adult QQU bird can consume 3-5 g of grain and perhaps destroy the same amount each day. A colony composed of a million birds (very common) is capable of consuming and destroying 7-10 tons of seeds/day (enough to feed 15,000-20,000 people for a day).

**Rodents:** No rodent outbreak or infestation was reported during this month, but the pest remains a constant threat to both pre- and post-harvest crops and produces in many countries around the globe.

*Several raptor birds such as barn owl, Tyto alba and other animals are known nature's biological*

*control agents that contribute to maintaining the balance between outbreaks and a period of lull.*

Front-line countries are advised to remain vigilant. Countries in the invasion zones should maintain the capacity to avoid any unexpected surprises. DLCO-EA, IRLCO-CSA, national PPDs, CNLAs, DPVs, ELOs and others are encouraged to continue sharing information with partners and other stakeholders as often as possible.

### Acridid Pesticide Inventories

A cumulative total of some 50,000 l of pesticides were used in April in Algeria, Egypt, Mauritania, Madagascar, Morocco, and Saudi Arabia.

Mindful of the phenomenon of pesticide becoming obsolete once past their shelf-lives, ETOP-prone countries, particularly those with large stocks, but are less likely to use them within a reasonable time, are encouraged to test their inventories regularly and determine whether they should use, retain, share or discard them immediately. All options should be explored to avoid severe human health impacts as well as huge environmental and financial burdens associated with handling and disposing of large stocks of obsolete pesticides.

A judiciously executed triangulation of stocks from countries with large inventory to where the need exists is a double-edged alternative that is worth considering.

**Note:** The core message of **pesticide stewardship [networking]** is to strengthen the national and regional pesticide delivery systems by linking partners at different levels and thereby reduce pesticide related health risks, avoid environmental pollution and improve food security as well as ultimately contribute to the national economy. **End note.**

### Estimated [acridid] pesticide inventories as of April, 2011

Country	Quantities in '000l/kg <sup>\$</sup>
Algeria	1,800~
Chad	108.09~
Eritrea	43.90~
Egypt	Data not available
Ethiopia	15.78
Libya	Data not available
Madagascar	1.6c + 7g + 1.15b
Mali	209d~
Mauritania	440.00~
Morocco	4,101~
Niger	28.24+
Senegal	519~
Saudi Arabia	Date not available
Sudan	860.00"
Tunisia	167.60~
Yemen	33.00 + .527 kg GM

<sup>\$</sup>These quantities include ULV, EC and dust formulations

~ data not necessarily current

d = Mali donated 21,000 l for RL in Malawi, Mozambique and Tanzania late last year and FAO facilitated the triangulation

+ quantity reported in Agadez left-over stocks of Chlopyrifos from the 2003-DL campaign was tested for quality and found to be usable through 2012

<sup>m</sup> This includes EC, ULV and Dust for all crop protection uses

GM = GreenMuscle

b = biopesticide (Madagascar)

c = conventional pesticides (Madagascar)

g = insect growth regulator (Madagascar)

### LIST OF ACRONYMS

AAW	African armyworm ( <i>Spodoptera expempta</i> - SEX)
AELGA	Assistance for Emergency Locust Grasshopper Abatement
AME	<i>Anacridium melanorhodon</i>
APL	Australian Plague Locust
APLC	Australian Plague Locust Commission
CAC	Central Asia and the Caucasus

CERF	Central Emergency Response Fund	ITF	Inter-Tropical Convergence Front = ITCZ)
CIT	<i>Calliptamus italicus</i>	FAO-DLIS	Food and Agriculture Organizations' Desert Locust Information Service
CLCPRO	Commission de Lutte Contre le Criquet Pèlerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)	Kg	Kilogram (~2.2 pound)
		L	Liter (1.057 quarts or 0.264 gallon or 33.814 US fluid ounces)
CNLA/CNLAA	Centre National de Lutte Antiacridienne (National Locust Control Center)	LMC	<i>Locusta migratoriacapito</i>
		LMM	<i>Locusta migratoria migratorioides</i> (African Migratory Locust)
CRC	Commission for Controlling Desert Locust in the Central Region	LPA	<i>Locustana pardalina</i>
CTE	<i>Chortoicetes terminifera</i>	MoAFSC	Ministry of Agriculture, Food Security and Cooperatives
DDLC	Department of Desert Locust Control	MoARD	Ministry of Agriculture and Rural Development
DL	Desert Locust	NOAA	National Oceanic and Aeronautic Administration
DLCO-EA	Desert Locust Control Organization for Eastern Africa	NSE	<i>Nomadacris septemfasciata</i>
		OFDA	Office of U.S. Foreign Disaster Assistance
DMA	<i>Dociostaurus maroccanus</i>	PHD/S	Plant Health Directorate/ Services
DPPQS	Department of Plant Protection and Quarantine Services	PPD	Plant Protection Department
		PPSD	Plant Protection Services Division/Department
DPV	Département Protection des Végétaux (Department of Plant Protection)	PRRSN	Pesticide Risk Reduction through Stewardship Network
ELO	EMPRES Liaison Officers	QQU	<i>Quelea quelea</i>
EMPRES	Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases	SGR	<i>Schistoseca gregaria</i>
		SWAC	South West Asia DL Commission
		TAG	Technical Assistance Group
		USAID	Unites States Agency for International Development
ETOP	Emergency Transboundary Outbreak Pest	UN	the United Nations
GM	Green Muscle (a fungal-based biopesticide)	ZEL	<i>Zonocerus elegans</i> , elegant grasshopper
ha	hectare (= 10,000 sq. meters, about 2.471 acres)	<p>To learn more about our activities and the programs we support, please, visit our website at:  <a href="http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/locust/">http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/locust/</a></p> <p><b>Point of Contact:</b></p> <p>Yeneneh T. Belayneh, Ph. D.</p>	
IRIN	Integrated Regional Information Networks		
IRLCO-CSA	International Red Locust Control Organization for Central and Southern Africa		
ITCZ	Inter-Tropical Convergence Zone		

If you have any questions, comments  
or suggestions, please, feel free to  
contact us - [ybelayne@usaid.gov](mailto:ybelayne@usaid.gov)  
Tel.: + 1-202-219-0469  
Fax: + 1-202-219-0508